UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

0000004

REPLY TO THE ATTENTION OF

MEMORANDUM

DATE: MAY 11 2001

SUBJECT: **ENFORCEMENT ACTION MEMORANDUM** - Determination of Threat to Public Health and the Environment and Selection of Non-Time Critical Removal Action at the Zionsville Third Site, Zionsville, Boone County, Indiana (05HM)

FROM: Michael McAteer, Remedial Project Manager
Remedial Response Branch

TO: William E. Muno, Director
Superfund Division

I. PURPOSE

The purpose of this memorandum is to document the determination of an imminent and substantial threat to public health and the environment, and the non-time critical removal action to be performed at the Zionsville Third Site in Zionsville, Indiana.

The selected removal action addresses the threats posed by the presence of soil and groundwater contaminated with dense non-aqueous phase liquids (DNAPLs) and with other volatile organic compounds (VOCs) at the Site, which consists of approximately two (2) acres of land near Zionsville, Indiana.

U.S. EPA anticipates that potentially responsible parties (PRPs) will perform this removal action pursuant to an Administrative Order. These response actions would mitigate the human health threats by treating the DNAPL source area and the other areas of soil and groundwater contamination.

This site is immediately adjacent to, and is closely related to, the Enviro-Chem Superfund Site. The Enviro-Chem Site was placed on the National Priorities List (NPL) on September 8, 1983.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID# IND 984259951

A. PHYSICAL LOCATION

Third Site (Figure 1) is a vacant tract of land located on property owned by Patricia Bankert, Boone Properties, and the Jonathan Bankert estate. The property is located approximately 150 feet east of U.S. Route 421 and approximately 300 feet south of the Enviro-Chem Superfund Site in Boone County, Indiana.

B. SITE DESCRIPTION AND BACKGROUND

Third Site occupies approximately two (2) acres of land in a largely rural area with some mixed commercial development. The nearest residence to the Site is located approximately 220 feet to the north. Site-related contamination extends approximately 75 feet west of U.S. Route 421. The Enviro-Chem Superfund Site is located approximately 300 feet to the north. The Northside Sanitary Landfill (NSL) Superfund Site is located approximately 350 feet to the east and northeast. The land west of Highway 421 is pastureland for a commercial horse breeding facility. The Site is located along north of Finley Creek and includes a man-made recreational pond used by a nearby residence for fishing and swimming. Finley Creek flows west from the Site and flows into Eagle Creek approximately one-half mile from the Site. Eagle Creek flows south from its confluence with Finley Creek for approximately 10 miles before emptying into Eagle Creek Reservoir. This reservoir supplies approximately six percent of the drinking water for the City of Indianapolis.

In Indiana, the low-income percentage is 29% and the minority percentage is 10%. To meet the Environmental Justice concern criteria the area within 1 mile of the site must have a population that's twice the state low income percentage and/or twice the state minority percentage. That is, the area must be at least 58% low-income and/or 20% minority. At this Site, the low-income percentage is .75% and the minority percentage is 16.7% as determined by Arcview or Landview III analysis. Therefore, this site does not meet the region's Environmental Justice criteria based on demographics as identified in Region 5 Interim Guidelines for Identifying and Addressing a Potential Environmental Justice Case, June 1998.

Historical aerial photographs of the Site area dating from 1950 to 1986 indicate the area was used for tank and drum storage and truck parking in the mid-to-late 1970s. Testimony from former Enviro-Chem employees and waste haulers indicate that waste handling and disposal at Third Site was a direct result of operations at the Enviro-Chem Site. Wastes disposed of at Third Site appear to be the same waste types and from the same commercial facilities as the wastes disposed of at the Enviro-Chem Site. The pond was reportedly created sometime after 1986

by excavating materials from the storage and parking area to build a berm around the southwestern, southern and southeastern sides of the pond and to regrade the area between the pond and Finley Creek.

The Third Site property is owned primarily by the Bankert family and its corporate entities, which is also true for the Enviro-Chem Superfund Site. Third Site is currently zoned I-2 (Industrial/Floodplain) and is expected to remain so. Access to Third Site is currently unrestricted.

In 1987 and 1992, a consultant for a group of the PRPs for the Enviro-Chem Superfund Site collected soil, groundwater, seepage soil and seepage water samples from the Third Site and confirmed volatile organic and semi-volatile organic contamination of soil in this area. In 1988, a consultant to U.S. EPA collected additional soil, groundwater and surface water samples from the Site and surrounding property. Soil sample results revealed elevated levels of VOCs such as tetrachloroethene (548,000 ug/kg), 1,1,1-trichloroethane (913,000 ug/kg), trichloroethene (3,310,000 ug/kg). Surface water sample results also revealed elevated levels of VOCs in the water adjacent to and immediately downstream of the Site. Total VOC levels in excess of 50 ug/l were detected in Finley Creek water samples adjacent to and immediately downstream of the area of known soil contamination. Samples collected from surface seeps discharging from the Site into Finley Creek revealed elevated levels of VOCs such as cis-1,2-dichloroethene (120,000 ug/l) and 1,1,1-trichloroethane (23,000 ug/l). Groundwater, which discharges from the Site into Finley Creek is also contaminated with elevated concentrations of VOCs and SVOCs such as 1,2-dichloroethene (35,000 ug/l), 1,1-dichloroethene (21,000 ug/l) and trichloroethene (11,000 ug/l).

Due to the potential for the soil contamination at or near the surface to migrate through wind dispersal and runoff or erosion into Finley Creek, a time-critical removal action was performed in June and July 1996 to realign a 40-foot oxbow section of Finley Creek away from the pond embankment.

In 1999 and 2000, a consultant for the PRPs collected samples of sediment, surface water, soil, and groundwater as part of the Engineering Evaluation/Cost Analysis (EE/CA) investigation. Sediment and surface water samples were collected from the pond, Finley Creek, and Unnamed Ditch bottoms. On October 24, 2000, U.S. EPA approved the final EE/CA Report summarizing current and historical data, evaluating risks, and assessing alternatives for removal actions to address unacceptable risks at the Site.

The EE/CA investigation results confirmed the presence of VOC contamination of surface water, sediment, soil and groundwater in the Third Site area and west of Highway 421.

The EE/CA investigation also confirmed the presence of a concentrated area of DNAPL contamination in soil and groundwater in the area of the berm south of the man-made pond. Contamination in the DNAPL area exceeds Maximum Contaminant Level (MCL) standards for drinking water and IDEM non-default soil standards necessary to avoid unacceptable impacts on groundwater. The DNAPL area extends over an estimated 4,500 square feet and to an estimated depth of up to 41 feet. In addition, groundwater contamination is present at levels above MCLs in two other areas outside the DNAPL area. One area of groundwater contamination extends downgradient from the DNAPL area. The other area is south of the NSL access road, upgradient from the DNAPL area, in an area where truck parking and container storage took place.

The EE/CA report concluded that levels of contamination in groundwater and the DNAPL area pose a threat to human health. Risk from ingestion of and dermal contact with contaminated groundwater exceed 10 X 10-4 excess lifetime cancer risk to human health and exceed the noncarcinogenic hazard quotient of one. In addition, the levels of VOC contamination in soil along the southern edge of the Bankert Pond (see attached figure) pose a risk of 1.9 x 10-5 excess lifetime cancer risk to human health from dermal contact and ingestion. This soil contamination, along with the DNAPL area, also acts as a continuous source of contamination to the surrounding groundwater.

VOCs identified as the contaminants of concern based on their occurrence in soil (measured in ug/kg) and/or groundwater (measured in ug/l), and their maximum concentrations are as follows: tetrachloroethene (330,000 ug/kg, 36 ug/l); trichloroethene (350,000 ug/kg, 870 ug/l); cis-1,2-dichloroethene (130,000 ug/kg, 29,000 ug/l); vinyl chloride (4,800 ug/kg, 860 ug/l); trans-1,2-dichloroethene (930 ug/kg, 100 ug/l); 1,1,1-trichloroethane (49,000 ug/kg, 5,800 ug/l); 1,1,2-trichloroethane (ND,12 ug/l); 1,1-dichloroethane (23,000 ug/kg, 780 ug/l); and 1,1-dichloroethene (100 ug/kg, 160 ug/l). Vinyl chloride was found in groundwater west of Highway 421 (390 ug/l).

A streamlined risk assessment, performed as part of the EE/CA, determined that the contamination at the Site did not pose an unacceptable ecological risk, and that the low levels of contamination found in the sediment and surface water samples did not pose a significant risk to human health.

C. OTHER ACTIONS TO DATE

As noted above, a group of the largest PRPs at the Site performed a relocation of Finley Creek in June and July, 1996. This work was performed under a Unilateral Administrative Order issued by U.S. EPA on March 22, 1996. U.S. EPA also issued a notice letter to all known PRPs on April 2, 1996.

The PRPs performed the EE/CA under an Administrative Order on Consent issued by U.S. EPA on June 6, 1999. After the EE/CA report was completed, on October 24, 2000, U.S. EPA issued a notice identifying its preferred non-time critical removal action for the Site and soliciting public comment on that proposed action.

The State of Indiana requested that the U.S. EPA take the lead role in addressing the risks posed by the Site. The State has consulted with U.S. EPA and has reviewed and commented on the submissions required under the U.S. EPA orders.

III. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at Third Site present an imminent and substantial threat to human health, welfare, and the environment and meet the criteria for a removal action as stated in the National Contingency Plan (NCP), Section 300.415, Paragraph (b) (2), specifically:

b. **actual or potential contamination of drinking water supplies or sensitive ecosystems;** this factor is present at the Site due to the existence of groundwater that is contaminated with elevated concentrations of VOCs such as tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, vinyl chloride, trans-1,2-dichloroethene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, and 1,1-dichloroethene above Indiana residential default groundwater protection criteria. Residential drinking water supply wells in the immediate vicinity of the site have not been effected by this groundwater but the potential exists for future impacts.

Further, contaminated groundwater is discharging into adjacent Finley Creek. Finley Creek is one of the tributaries which feeds into Eagle Creek Reservoir, which supplies approximately six percent of the drinking water for the City of Indianapolis. The potential for VOC contamination of the drinking supply by this source is low given the volatility of the contaminants and lengthy travel distance between the Site and the reservoir.

c. **the unavailability of other appropriate federal or state response mechanisms to respond to the release;** this factor supports the actions required by this Order at the Site because the State of Indiana currently does not have the available funds to respond to this non time-critical situation.

IV. ENDANGERMENT DETERMINATION

The actual or threatened release of hazardous substances from the Site as described in Sections II & III, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to the public health, or welfare, or the environment within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

V. PROPOSED ACTION AND ESTIMATED COSTS

The results of the supplemental investigation performed as part of the EE/CA are described in Section II above. The EE/CA Report identified a number of different options for addressing contamination at the Site.

After evaluating the EE/CA Report, on November 13, 2000, U.S. EPA issued a notice identifying its proposed cleanup measures for the Site and requesting public comment on the proposal. The public comments received and the Agency's responses are summarized in the attached responsiveness summary.

As a result of this process, U.S. EPA has selected a removal action for the Site. This action involves the treatment of the DNAPL area and of contamination in the soil and groundwater in other areas of the Site. The following work must be completed to alleviate the potential and actual threats to human health and the environment posed by the hazardous substances present at the Site:

a. Treat and contain the DNAPL area (approximately 4,500 square feet) by using a sealed sheet pile wall and then pumping out the interior to remove the bulk of the mobile DNAPL. The containment component of this action will minimize further leaching of contaminants into area groundwater by diverting groundwater flow around the contained area. Dewatering of the portion of Bankert Pond within the containment area will be required and the sheetpile joints will be sealed. The water removed from the DNAPL area will be treated by means sufficient to meet Indiana discharge requirements. The existing treatment systems at the adjacent Enviro-Chem Superfund site may be used for this purpose. Following the localized pump and treat within the containment wall, chemical oxidation will be initiated by injecting oxidizing agent(s) into the area to break down any remaining DNAPL. Also, a RCRA-

compliant cover will be installed to prevent further infiltration of rainwater and a gate containing a reactive media to treat groundwater from within the DNAPL area will be installed. The combination of these activities provides a more effective removal action than any of the activities would provide on their own. Design and construction of the DNAPL treatment and containment system is expected to take approximately 6 to 10 months. U.S. EPA currently estimates that the pump and treat system within the contained area would require approximately 2 to 6 months of operation in order to reach the cleanup goals. Further details regarding the planned approach for removing the DNAPL area can be found in Section 5.0 of the EE/CA.

b. Use Soil Vapor Extraction (SVE) to remove contaminants from the area of soil contamination (approximately .5 acres) in excess of the IDEM site-specific soil criteria for protection of residential groundwater. Soil sampling will be conducted prior to construction to determine the full extent of soils exceeding the criteria. The air and any water removed from the SVE system will be treated by means sufficient to meet Indiana emission and discharge requirements. The existing treatment systems at the adjacent Enviro-Chem Superfund site may be used for this purpose. It is estimated that the SVE system can be constructed in 6 to 10 months and will operate for approximately 6 to 12 months.

c. Install wells with pumps to remove sufficient groundwater to decrease contamination from the two groundwater plumes by a minimum of 90%. It is estimated that this level of reduction can be obtained over approximately 6 weeks of pumping at a rate of 15 gallons per minute. The removed groundwater will be treated in a system sufficient to meet Indiana requirements for direct discharge to Finley Creek. The existing treatment systems at the adjacent Enviro-Chem Superfund site may be used for this purpose.

The remaining contamination in groundwater would be addressed through monitored natural attenuation. In addition to continued sampling of existing wells, one or more new monitoring wells would be installed at the leading edge of Plume 1, midway between MW-18 and MW-25 (refer to as MW-27) to assure that Indiana default residential groundwater standards are met and maintained. It is estimated this process may take 10 years.

d. Place deed restrictions and other appropriate institutional controls on the involved properties (onsite and offsite) to prevent the use of groundwater in these areas and to preserve the integrity of the DNAPL-area cover.

e. Routinely sample the surface water and groundwater to ensure the removal of contaminants to action levels (see Section VI below). Surface water and groundwater samples will be collected quarterly during the operation and following cessation of the groundwater collection system until action levels are achieved. Sampling frequency may be reduced following cessation of collection system operation as appropriate based on trends determined from the quarterly monitoring events. Groundwater sampling will include the new well installed near the downgradient end of the plume (South of Finley Creek and West of Highway 421).

f. Establish appropriate Quality Assurance and Quality Control programs to assure the accuracy and reliability of sampling data used to further define the contaminated areas and to assess progress and compliance with cleanup standards.

U.S. EPA estimates that this removal action will cost in the range of approximately $3.1 to $6.6 million and take approximately 6 to 10 months to construct. In addition, to the construction of the removal the PRPs have agreed to operate and monitor to ensure cleanup levels are met and maintained. Because the cost estimates used in the EE/CA Report excluded several contingencies (such as certain costs of access, institutional controls and groundwater treatment), it is likely that actual costs will be near the high end of that estimated cost range. These technologies are readily available, administratively feasible, and have performed effectively at other sites.

The response actions described in this Memorandum directly address actual or threatened releases of hazardous substances, pollutants, or contaminants at the facilities in the affected area that may pose an imminent and substantial endangerment to public health and the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

All applicable or relevant and appropriate requirements (ARARs), including those specifically identified in the EE/CA Report, will be complied with to the extent practicable. Several of these ARARs are described specifically in Section VI below. The removal actions will also include planning for the provision of

post-removal site control, consistent with the provisions of Section 300.415 of the NCP. This is the final phase of work expected to be completed to specifically address the DNAPL area, and the other contaminated soils and groundwater at Third Site.

The other removal alternatives considered for the Site are described in detail in the EE/CA Report. They included:

1) for the DNAPL area - institutional controls; containment; chemical oxidation; localized pump and treat; excavation and low temperature thermal desorption; and chemical oxidation facilitated by containment, dewatering and capping.

2) for the contaminated soils: excavation and off-site disposal; and soil vapor extraction.

3) for groundwater plume 1: monitored natural attenuation; treatment wall; focused pump and treat; and long-term pump and treat.

4) for groundwater plume 2: monitored natural attenuation; phytoremediation; focused pump and treat; and long-term pump and treat.

The selected non-time critical removal action represents the best combination of effectiveness, implementability and cost to address the DNAPL area, contaminated soils, and contaminated groundwater at the Site. The EE/CA Report provides a more detailed comparison of the alternatives that supports the selection of this removal action.

VI. ACTION LEVEL STANDARDS AND ARARs

This section presents the action levels to be used for determining compliance with the cleanup objectives for DNAPL, soil, groundwater, and surface water at Third Site. The action levels are summarized in Table 1.

a. **DNAPL Area, following containment and chemical oxidation**: Within the containment wall, achieve a minimum 90% reduction in total VOC groundwater concentration from current levels in monitoring wells MW-19A and MW-19B. In a monitoring well immediately outside the containment wall gate, meet 230 ug/l total VOCs (10% of the current MW-22 total VOC concentration of 2,328 ug/l).

b. **Vadose Zone Soil, following SVE**: Achieve IDEM residential groundwater protection non-default site-specific soil criteria based on the Summers model.

c. **Groundwater, following focused pump and treat**: Achieve residential default criteria **or** 90% reduction in total VOCs at each target area monitoring well (MW-17, MW-20, MW-22, MW-24, MW-25, MW-26 and MW-27). Examples: MW-22 VOCs reduced from 2,328 ug/l to 233 ug/l and MW-25 VOCs reduced from 454 ug/l to 45 ug/l.

d. **Groundwater, following natural attenuation:** Achieve Indiana residential default criteria for the VOC contaminants of concern identified in the EE/CA Report in all areas of the plumes outside the DNAPL area. Groundwater monitoring will continue until criteria are met.

e. **Surface Water:** Achieve action levels that are based on the lower of human health and ecological criteria.

All handling of contaminated soil on-site will comply with the requirements of RCRA, including regulations applicable to generators and transporters of hazardous wastes under 40 CFR Parts 241, 261, 262, 263 and 268 and 329 Indiana Administrative Code § 3.1 Rules 6, 7 and 10; regulations applicable to solid and special waste under 329 IAC §§ 10 and 11; and facility management standards under 40 CFR Part 264 and 329 IAC § 3.1 Rule 10. The Risk Integrated System of Closure (RISC) guidance describes the application of RCRA closure standards in the State of Indiana under 329 IAC § 3.1 Rule 10.

All emissions of volatile and fugitive emissions generated on-site during the removal action will comply with the substantive requirements of the Clean Air Act, including hazardous air pollutant standards and fugitive dust emission standards under 326 IAC and air quality standards under 40 CFR Part 50.

Any on-site discharges of treated groundwater will comply with the substantive requirements of the Clean Water Act, including water quality standards under 327 IAC §§ 2-1-7 and 2-1-1.5 and stormwater management requirements under 327 IAC 15-5.

Groundwater outside of the DNAPL area will comply with MCLs established under the Safe Drinking Water Act and with Indiana default residential criteria under the RISC. Soils outside the DNAPL area will comply with Indiana non-default residential criteria under the RISC.

TABLE 1
Action Levels for Soil, Groundwater, and Surface Water for Third Site Non-Time Critical Removal Action
Third Site, Zionsville, Indiana

Contaminants of Concern	Soil Action Levels[a] - Post SVE (ug/kg)	Groundwater Action Levels[b] - Post Natural Attenuation (ug/l)	Surface Water Action Levels[c] (ug/l)
1,1-dichloroethane	23,249	990	-
1,1-dichloroethene	287	7	3.2
cis-1,2-dichloroethene	1,740	70	-
trans-1,2-dichloroethene[d]	3,285	100	1,350
tetrachloroethene	386	5	8.85
1,1,1-trichloroethane[d]	11,636	200	528
1,1,2-trichloroethane	-	5	42
trichloroethene	402	5	81
vinyl chloride[e]	43	2	20

a. IDEM non-default site-specific soil criteria for protection of residential groundwater (based on Summers model)
b. IDEM default residential groundwater criteria
c. National Recommended Water Quality Criteria; Notice. Federal Register, Monday December 7, 1998.
d. For surface water value, EPA Region 4 Ecological Risk Assessment Bulletins–Supplement to RAGS, August 11, 1999
e. For surface water value, Indiana – Point of Water Intake

VII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delay or inaction may result in increased likelihood of a release of VOC contaminants of concern into Finley Creek or into private water supply wells as the groundwater plume expands. Finley Creek discharges into Eagle Creek that flows into a reservoir used as a potable water source for the City of Indianapolis.

Construction of this removal action is expected to take approximately 6 to 10 months to complete and 3 years to operate. It is also expected to take 10 years to conclude monitored natural attenuation.

VIII. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues associated with this Site.

IX. ENFORCEMENT

The PRPs at this Site are identified, and U.S. EPA expects that they can and will perform the selected response actions properly and promptly.

X. RECOMMENDATION

This decision document represents the selected removal action for the Third Site located in Zionsville, Boone County, Indiana, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this Site. Conditions at the Site meet the NCP Section 300.415 (b) (2) criteria for a removal action. You may indicate your decision by signing below.

APPROVE: _____ DATE: 5/11/01
Director
Superfund Division

DISAPPROVE: _____ DATE: _____
Director
Superfund Division

Attachments: A. Site Figure
B. Administrative Record

cc: E. Watkins, U.S. EPA HQ, 5202G
D. Henne, U.S. Department of Interior
Myron Waters, Indiana Dept. of Environmental Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015

Responsiveness Summary

During the 30 day public comment period, which ran from November 13 to December 13, 2000, U.S. EPA sought input from the public on the proposed plan for the non-time critical removal action at Third Site. U.S. EPA received one comment, in written form, from the Third Site Trust Fund Trustees dated December 13, 2000. U.S. EPA also received three e-mail questions from local residents regarding groundwater quality.

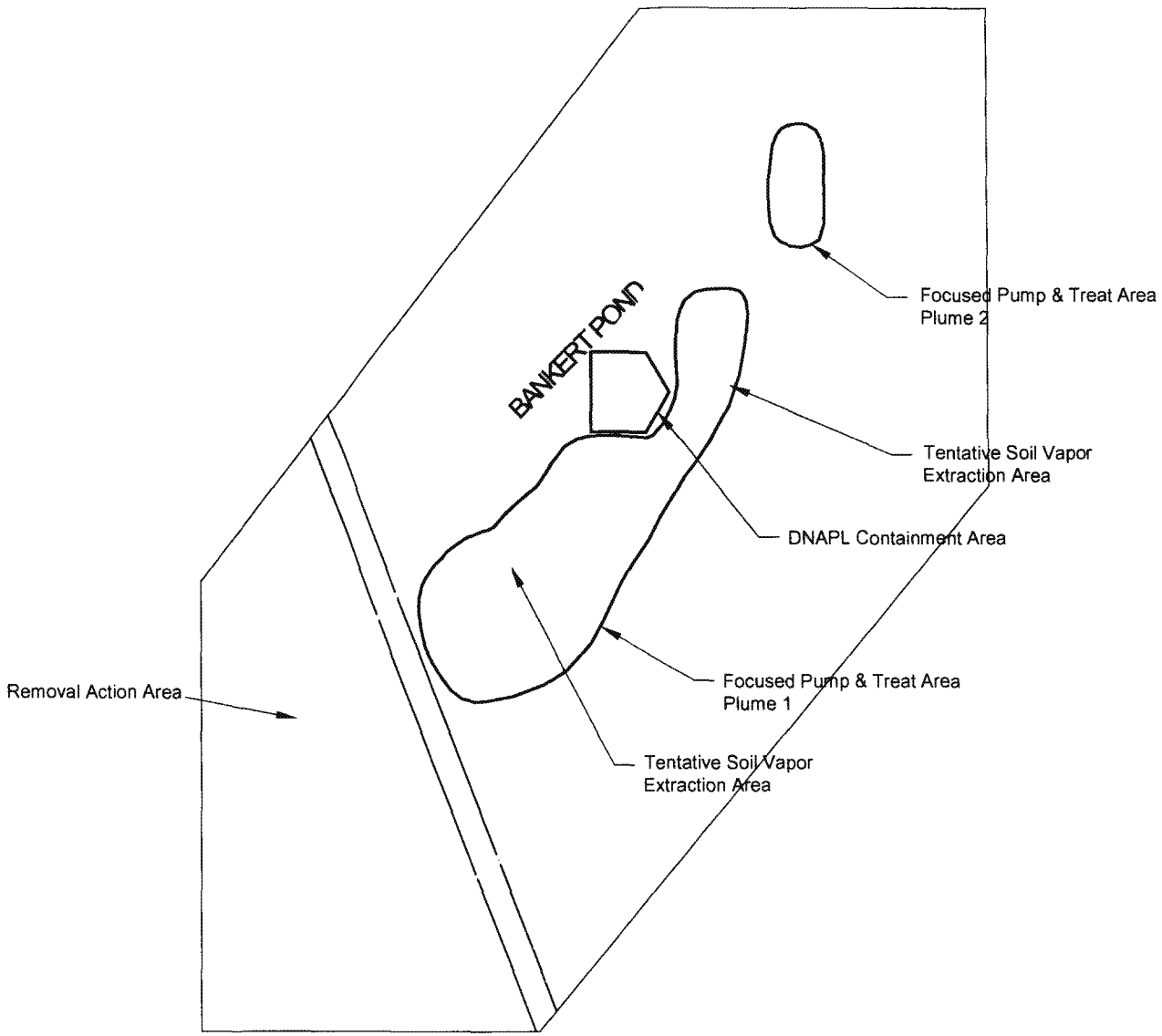
Comment: The written comment from the Third Site Trustees related to the removal cost estimate cited by U.S. EPA in the proposed plan. The commentors noted that this estimate may likely be an underestimate of actual costs. The reasons cited for the possible underestimation included the fact that there is no estimate at the present time for deed restrictions, access agreements, cooperative agreements for waste water treatment, possible additional investigations of groundwater contamination source areas, winterization of water lines, and possible extended monitoring periods for natural attenuation of groundwater. For these reasons, the commentors believe that the projected cost for the removal action will likely be closer to $6 million.

U.S. EPA Response: Based upon the Engineering Evaluation/Cost Analysis (EE/CA), U.S. EPA estimated the total removal cost to be approximately $4.5 million. This estimate was arrived at by adding the estimated costs for each subtask for the proposed removal action (i.e., cost for soil vapor extraction plus cost for groundwater pump and treat, etc.). The EE/CA also estimated the cost of the removal action at $4.4 million, however, as with all cost estimations under Superfund, a range is used (50% increase or 30% decrease). The range, listed as a footnote in the EE/CA, is therefore $3.1 million to $6.6 million. U.S. EPA agrees with the commentors that the cost estimate of $4.5 million may be an underestimation based upon the factors cited by the commentors. There is a high likelihood that the actual cost for implementation of this removal action will be at the higher end of the range.

Questions/Comments from Local Residents: Three separate e-mail messages were received by U.S. EPA during the public comment period. All three messages asked U.S. EPA for clarification on the extent of groundwater contamination in the vicinity of the Third Site. The concern represented in each comment related directly to possible contamination of private drinking water wells and whether or not U.S. EPA intended to sample private residential wells or install an alternate drinking water supply.

U.S. EPA Response: U.S. EPA also responded via e-mail to each of the three commentors. U.S. EPA clarified that the area of

groundwater contamination emanating from Third Site does not extend more than a few hundred feet west of U.S. Highway 421 and therefore has not affected any residential wells. The nearest downgradient residential wells are located approximately 300 feet south of Finley Creek and approximately 1,500 feet southwest of Third Site. U.S. EPA further clarified that residential wells nearest to the Site were sampled during the pre-EE/CA investigation phase and none showed any organic or inorganic contamination. As a result, there is no need to include further residential well sampling or an alternate water supply as components of the proposed removal action at Third Site. U.S. EPA also noted that the proposed remedy included the construction of a focused pump and treat system that would control further migration of the groundwater plume and thereby eliminate any potential risk of nearby residential well contamination.



LEGEND

Property Line

Fence Line

Existing Monitoring Well

N

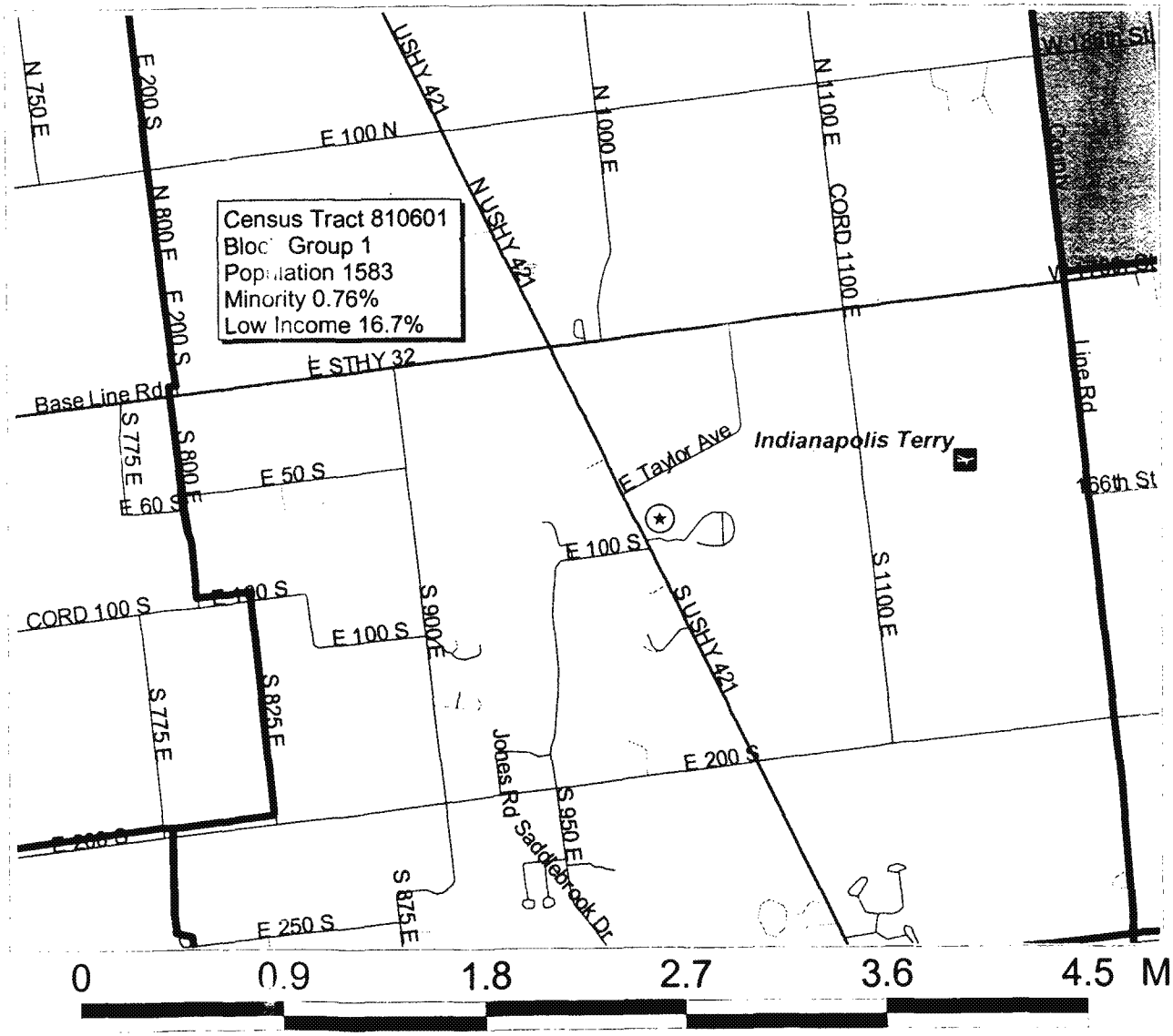
0 100 200 ft

THIRD SITE
REMOVAL ACTION AREAS
U.S.EPA ACTION MEMORANDUM
ZIONSVILLE, INDIANA

DATE: 12/15/00
DRAFTER: CBG (APR)
CONTRACT NUMBER: [21-6799F]
APPROVED:
REVISED:
FIGURE: 1

Region 5 Superfund EJ Analysis

Third Site Union Township,IN



EJ Identification

- Low Income and Minority Less than State Average
- Low Income or Minority at or Greater than State Average
- Low Income or Minority 2 Times or Greater than State Average [meets Region 5 EJ Case criteria]
- Site Location
- Block Group Boundary

Region 5 EJ Case Criteria for Indiana
Minority: 20% or greater
Low Income: 58% or greater

U.S. EPA Region 5 Superfund EJS

Date of Map: 5/7/01

Source of Map: 1990 Census Database

AK

ATTACHMENT B

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
THIRD SITE
ZIONSVILLE, INDIANA

ORIGINAL
MARCH 19, 1996

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	06/00/87	U.S. EPA		Eleven Aerial Photographs of the Northside Sanitary Landfill and Enviro-Chem Sites from 1950, 1955, 1962, 1972, 1978, 1980, 1982, 1983 and 1987	11
2	07/27/87	Environmental Resources Management-North Central, Inc.	U.S. EPA	Soil Boring Investigation in the Vicinity of Finley Creek	8
3	10/13/88	Maxwell, E., U. S. EPA	Addressees	Letter re: U.S. EPA's Conclusions Concerning Contamination at the Third Site	2
4	11/09/88	CH2M Hill	U.S. EPA	Technical Memorandum No. 2: Geotechnical, Hydro-geological and Supplemental Predesign Investigation for the Northside Sanitary Landfill/Environmental Conservation and Chemical Corporation Site	336
5	12/11/89	Environmental Resources Management-North Central, Inc.	U.S. EPA	Environmental Review for the Third Site	31
6	04/00/90	Environmental Resources Management-North Central, Inc.	U.S. EPA	Depth Determination of Fishing Pond for the Third Site	25

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
7	03/12/96	ERM-EnviroClean-North Central, Inc.	U.S. EPA	Creek Realignment Project for the Third Site	33
			UPDATE #1 MAY, 1996		
1	03/22/96	Muno, W. U.S. EPA	Respondents	Unilateral Administrative Order w/Cover Letter	23
2	04/02/96	Karl, R., U.S. EPA	Respondents	Letter re: General Notice of Potential Liability	4
			UPDATE #2 SEPTEMBER, 1996		
1	09/16/96	McAteer, M. U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health and the Environment at the Third Site, Zionsville, IN	11
			ADDENDUM JUNE 16, 1998		
1	04/30/98	Muno, W. and G., Ginsberg; U.S. EPA	Ullrich, D., U.S. EPA	Memorandum re: Administrative Order Compliance Status and Closure	21
			UPDATE #3 OCTOBER 15, 1999		

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	9/00/99	ENVIRON International Corporation	U.S. EPA	Engineering Evaluation/ Cost Analysis Field Investigation Sampling Plan (Revision 1) for the Third Site	429
			UPDATE #4 FEBRUARY 18, 2000		
1	1/00/00	ENVIRON International Corporation	U.S. EPA	Field Investigation Data Report for Third Site, Zionsville, Indiana	195

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
			UPDATE #5 APRIL 9, 2001		
1	04/06/01	McAteer, M., U.S. EPA	File	Memorandum re: Methodology for Determining Action Levels at Third Site	3
2	00/00/00	McAteer, M., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health and the Environment and Selection of Non-Time Critical Removal Action at the Zionsville Third Site **(PENDING)**	

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
			UPDATE #5 APRIL 25, 2001		
1	10/10/00	ENVIRON International Corporation	U.S. EPA	Engineering Evaluation/ Cost Analysis (Revision 2) for the Third Site	481
2	10/24/00	McAteer, M., U.S. EPA	Ball, R., ENVIRON International Corporation	Letter re: U.S. EPA's Approval of the October 10, 2000 EE/CA for the Third Site	1
3	04/06/01	McAteer, M., U.S. EPA	File	Memorandum re: Methodology for Determining Action Levels at Third Site	3
4	00/00/00	McAteer, M., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health and the Environment and Selection of Non-Time Critical Removal Action at the Zionsville Third Site **(PENDING)**	